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Claims

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We claim:

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1. A route determination process with the properties that it routes on multiple levels concurrently using varying related route requirements, paths from lower levels act as simple links at higher levels, and returns a selection of routes of varying characteristics that all meet the route requirements for final route selection.
2. The method of Claim 1, wherein each level has the following level specific data sets:
(a) A set of nodes, a neighbor node being a node that can be reached on a one hop path; (b) A set of links that interconnect the nodes; (c) An array describing the interconnection of links and nodes; (d) A level is either full duplex or half duplex; (e) A set of metric properties used at this level; (f) A cache fill process used to fill the array of cache entries for this level; (g) A resource reservation, selection, and commitment method; (h) A cache of previously discovered approximate paths that have not yet been aged out.
3. The method of Claim 2a, wherein each node/link has a set of primitive metric values that are used to calculate a path's aggregate values by its cache fill process; The members of the set are different for each level; When a common cache fill process is used, the step_over method will perform the aggregation.
4. The method of Claim 2a, wherein each node/link has a set of resources that are used to interconnect the links to provide a data transmission path of multiple hops.
5. The method of claim 2a, wherein the resources a node has determines whether it has a basic property that is used to determine the node's participation at a level; Example, if the